

Amendments to the Claims:

This listing of claims will replace, without prejudice, all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method for ~~distinguishing between two different materials~~ determining the presence or absence on a base material of a second material comprising the steps of:

- a. ~~directing radiation of two different wavelengths~~ at an inspection site on a surface of said base material radiation of two different wavelengths, radiation of one of the wavelengths being more strongly absorbed by one material relative to its absorption by the other material and radiation of the other wavelength not displaying the same difference in absorption;
- b. measuring the intensity of reflected radiation resulting from the radiation directed at the inspection site; and
- c. ~~determining which of the two materials is present~~ the presence or absence of the second material at the inspection site based on the intensity of the reflected radiation resulting from directed radiation of one of the wavelengths relative to the intensity of the reflected radiation resulting from directed radiation of the other wavelength.

2. (Original) The method according to claim 1 wherein step (c) comprises comparing the intensity of the reflected radiation resulting from directed radiation of one of the wavelengths to a first absorption reference value to generate a first difference value, comparing the intensity of the reflected radiation resulting from directed radiation of the other wavelength to a second absorption reference value to generate a second difference value, and comparing the first and second difference values to determine a comparison value, a comparison value in excess of a preselected number being indicative of the presence of one of the materials at the inspection site.

3. (Original) The method according to claim 1 wherein step (a) comprises activating a radiation source to generate the radiation of the two different wavelengths and alternately positioning a first band-pass filter that passes radiation of one of the wavelengths and a second band-pass filter

that passes radiation of the other wavelength between the radiation source and the inspection site or alternatively between the inspection site and a detector of the reflected radiation.

4. (Original) The method according to claim 1 wherein step (a) comprises activating a first coherent radiation source to generate radiation of one of the wavelengths and activating a second coherent radiation source to generate radiation of the other wavelength.

5. (Original) The method according to claim 4 wherein the first and second coherent radiation sources are alternately activated to alternately direct radiation each of the two different wavelengths at the inspection site.

6-8. (Canceled)

9. (Currently amended) The method according to claim ~~[[8]]~~ 1 wherein the radiation of one of the wavelengths has a wavenumber of approximately 1750cm^{-1} .

10. (Original) A method for selectively removing one of two materials from an inspection site comprising the steps of determining whether the second material ~~which of the two materials~~ is present at the inspection site according to the method of claim 1 and selectively removing one of the materials from the inspection site responsive to the determination.

11. (Currently amended) A method for determining whether a substance is present on a base material at an inspection site comprising the steps of:

- a. directing light of a first wavelength at ~~the~~ an inspection site on a surface of the base material;
- b. determining a first inspection site absorption value corresponding to absorption of the light of the first wavelength directed at the inspection site;
- c. calculating a first difference value by comparing the first inspection site absorption value to a first absorption reference value;
- d. directing light of a second wavelength at the inspection site;
- e. determining a second inspection site absorption value corresponding to absorption of the light of the second wavelength directed at the inspection site;
- f. calculating a second difference value by comparing the second inspection site absorption value to a second absorption reference value; and

- g. generating an output signal indicating whether the substance is present at the inspection site based on the difference between the first difference value and the second difference value;

wherein the substance absorbs one of said first and second wavelengths substantially more than the other of said first and second wavelengths, and the base material absorbs said first and second wavelengths more equally than the substance.

12. (Currently amended) An apparatus for distinguishing between two different materials comprising:

- a. a radiation module for generating radiation of two different wavelengths and directing the radiation to an inspection site on a surface of one of the materials;
- b. a detector module for receiving radiation reflected from the inspection site and generating a corresponding reflection signal; and
- c. a control module for receiving the reflection signal, determining which of the two materials is ~~present~~ exposed at the inspection site based on whether the intensity of reflected radiation ~~resulting from directed radiation~~ of one of the wavelengths relative to the intensity of reflected radiation ~~resulting from directed radiation~~ of the other wavelength is substantially different from or similar to the intensity of the directed radiation of said one wavelength relative to the intensity of the directed radiation of said other wavelength, and generating an output signal indicating which of the two materials is ~~present~~ exposed at the inspection site.

13. (Original) The apparatus according to claim 12 wherein the radiation module comprises a first coherent radiation source that generates radiation of one of the wavelengths and a second coherent radiation source that generates radiation of the other wavelength.

14. (Original) The apparatus according to claim 13 wherein the control module is coupled to the radiation module and controls the radiation module to alternately activate the first and second coherent radiation sources.

15. (Original) The apparatus according to claim 12 wherein the radiation module comprises a quantum cascade laser.

16. (Original) The apparatus according to claim 12 wherein the radiation module comprises a non-coherent radiation source, a first band-pass filter that passes radiation of one of the wavelengths, a second band-pass filter that passes radiation of the other wavelength, and a pulse generator for alternately passing the first and second band-pass filters between the non-coherent radiation source and the inspection site.

17. (Original) The apparatus according to claim 12 further comprising a first optical transmission medium for directing radiation from the radiation module to the inspection site and a second optical transmission medium for directing the reflected radiation to the detector module.

18. (Currently amended) A device for selectively removing one of two different materials from an inspection site, the apparatus device comprising an apparatus according to claim 12 for determining which of the two materials is present exposed at the inspection site and a[[n]] removal apparatus for selectively removing said one of the materials from the inspection site responsive to the output signal.

19-20. (Canceled)

21. (Currently amended) The method according to claim ~~12~~ 24 of removing cement from bone, wherein the radiation of said one of the wavelengths has a wavenumber of approximately 1750 cm^{-1} .

22. (New) The method according to claim 1, further comprising moving said inspection site over a surface of said base material, and determining where on said surface said second material is present.

23. (New) The method according to claim 22, further comprising selectively removing material from said surface where it is determined that said second material is present.

24. (New) The method according to claim 22, wherein radiation of said one wavelength is more strongly absorbed by said second material than by said base material and radiation of said other wavelength is not substantially more strongly absorbed by said second material than by said base material, further comprising selectively removing material from said surface where said first wavelength is absorbed substantially more strongly than said second wavelength.

25. (New) An apparatus according to claim 12, wherein said radiation module and said detector module are arranged to be movable for moving said inspection site over a surface, said control

module generating an output signal indicating where on said surface either of the two materials is exposed.

26. (New) An apparatus according to claim 26 for endoscopic or arthroscopic cleaning of bone, further comprising removal apparatus for selectively removing one of said materials from the inspection site responsive to the output signal.